

## Claims

1. Method for recognizing reductions in service capacity in a communication network, wherein
  - 5 - on the establishment and/or modification of a service, information relating to the functional properties and topological arrangement of network elements relevant to the provision of said service is stored in a network element database and assigned to the service,
  - 10 - the information stored in the network element database is made available to a service quality and/or error monitoring device,
    - recorded measured values are compared with the information stored in the network element database by the service quality and/or error monitoring device for inadmissible deviations,
  - 15 - in the event of an inadmissible deviation, a message is generated about a reduction in service capacity, giving details of the service concerned.
2. Method according to Claim 1,
  - 20 wherein information relating to network elements specified as relevant to provision of the service by a service level agreement is stored in the network element database and wherein measured values relating to network elements specified as relevant to provision of the service by a service level agreement are recorded.
  - 25
3. Method according to any one of Claims 1 to 2, wherein the message contains a statement about service quality and/or service availability.
- 30 4. Method according to any one of Claims 1 to 3, wherein the message about a reduction in service capacity is transmitted to a network control system for rectification of the reduction in service capacity.
- 35 5. Method according to any one of Claims 1 to 4,

wherein the information stored in the network element database describes admissible operating ranges of the network elements.

6. Method according to any one of Claims 1 to 5,

5 wherein on the establishment, modification and/or deletion of a service, network elements affected by the establishment, modification and/or deletion are configured by a network control system accessing the information stored in the network element database.

10

7. Method according to any one of Claims 1 to 6,

wherein on the establishment and/or modification of the service a recording of measured values relating to network elements specified by the service level agreement as relevant to provision of the  
15 service is initiated.

8. Communication network control and monitoring system having

- a service providing device for establishing and/or modifying a service,

20 - a communication connection management device for storing information relating to the functional properties and topological arrangement of network elements relevant to provision of the service in a network element database assigned to the communication connection management device, for assigning this  
25 information to the service and for making available the information stored in the network element database to a service quality and/or error monitoring device,

- a service quality and/or error monitoring device for comparing recorded measured values with the information stored in the  
30 network element database for inadmissible deviations and, in the event of an inadmissible deviation, for generating a message about a reduction in service capacity giving details of the service concerned.

9. Control program for a communication connection management device of a communication network control and monitoring system according to Claim 8, said control program being loadable into a working memory of a data processing system assigned to the communication connection management device and having at least one code section, on execution of which

- on the establishment and/or modification of a service, information relating to the functional properties and topological arrangement of network elements relevant to provision of the service is stored in a network element database and assigned to the service,
- the information stored in the network element database is made available to a service quality and/or error monitoring device, when the computer program is running in the data processing system.

10. Control program for a service quality and/or error monitoring device of a communication network control and monitoring system according to Claim 8, said control program being loadable into a working memory of a data processing system assigned to the service quality and/or error monitoring device and having at least one code section, on execution of which

- recorded measured values are compared with information relating to the functional properties and topological arrangement of network elements relevant to provision of a service, said information being stored in a network element database, for inadmissible deviations,
- in the event of an inadmissible deviation, a message is generated about a reduction in service capacity, giving details of the service concerned

when the computer program is running in the data processing system.